

(19)



JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2000103741 A

(43) Date of publication of application: 11.04.00

(51) Int. Cl

**A61K 35/78**  
**A23L 1/30**  
**A23L 2/52**  
**A23L 2/38**

(21) Application number: 10277896

(22) Date of filing: 30.09.98

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SHIMOMURA KENJI**(54) LIPASE INHIBITOR****(57) Abstract:**

**PROBLEM TO BE SOLVED:** To obtain a lipase inhibitor having high safety and capable of suppressing absorption of carbohydrates and preventing obesity, arteriosclerosis, or the like.

**SOLUTION:** This lipase inhibitor is obtained by formulating solvent extracts of Gambir, a leaf of a guava (*Psidium guajava* L.) and a leaf of a meadowsweet (*Filipendula ulmaria*). The method for

extraction thereof may be carried out by extracting the Gambir and leaves with water or a hydrophilic organic solvent or a mixed liquid thereof. The resultant extracts can be formulated with a food and thereby readily ingested. The formulable food is not especially limited and the extracts can be formulated with a beverage, or the like, and applied to a diet food or a healthy food. The extracts can be utilized for general meals.

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## CLAIMS

## [Claim(s)]

[Claim 1] The ~~lipase inhibitor~~ which blended the solvent extraction object of gambir catechu, the leaf a guava's, and a MEDOU sweet's leaf

## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

## [0001]

[Industrial Application] Safety of this invention is high, it presses down absorption of a fat, and relates to the food which prevents obesity, a heart disease, arteriosclerosis, etc.

## [0002]

[Description of the Prior Art] In our country, the amount which eating habits West-ize, and fat intake increases every year, and exercises in social life also decreases, and the men of obesity or an obesity inclination increase in number, and a heart disease, arteriosclerosis, etc. are increasing. inside although fat intake is decreased as correspondence and it is necessary to be made to carry out moderate movement -- it cannot carry out easily. For this reason, pressing down absorption of the fat taken in also needs to correspond to obesity, a heart disease, arteriosclerosis, etc.

[0003] ~~Gambir Catechu~~ ~~Guava~~ ~~Medou Sweet~~ / Rubiaceae It is the extractives made from desiccation water which boiled the leaf and young branch of gambir with water, and \*\*(ed) them, and it uses as astringent emetic cathartic or is widely used as an oral cavity refrigerant.

[0004] It is called a guava or a watch pomegranate, and is the vegetation of the Myrtaceae guava group, and a guava is PUJIJUMU about a scientific name. GUAYABA It is called El (Psidium guajava L.). Generally, the fruit is eaten with eating raw food, a jam, juice, etc. Although native is the tropical United States, distribution was widely grown in various parts of a tropical area and the subtropical zone, was grown in Kyushu Minabe in Japan, and has become wild in Ryukyu Islands. Moreover, the guava is used for enteritis, dysentery, and dyspeptic diarrhea as a medicine, and the leaf is considered as substitution of tea. Moreover, in JP,5-246837,A for which the applicant for this patent applied, use of whitening, surface deterioration prevention, etc. is achieved by using the solvent extraction object of the leaf of a guava as a charge of makeup.

[0005] A MEDOU sweet is a scientific name Filipendula. It is called ulmaria and a Japanese name is called SEIYOUNATSUYUKISOU. Although Europe and Asia are made native, it is the perennial herbaceous plant naturalized to North America etc.

## [0006]

[Problem(s) to be Solved by the Invention] It is safe and a lipase inhibitor effective in obesity, a heart disease, and arteriosclerosis is obtained.

## [0007]

[Means for Solving the Problem] As a result of inquiring wholeheartedly, by blending the solvent extraction object of gambir catechu, the leaf a guava's, and a MEDOU sweet's leaf showed that a problem was solvable. What is necessary is just to extract these extract approaches using water, hydrophilic organic solvents, or such mixtures.

[0008] If these are blended with food, it can take in easily. There is especially no limitation, is blended with a drink etc., and can apply the food which can be blended to diet food or health food. Moreover, it can also use for a general meal.

## [0009]

[Example] Although the example of manufacture and an example explain still more

concretely below, this invention does not need to say that it is not what is limited according to this example of manufacture, and an example.

[0010] [Example 1] It was left for five days, having added 300ml of ethanol water solutions to 10g of gambir catechus 50%, and sometimes agitating. After filtering this, it freeze-dried, after evaporating.

[0011] [Example 2] It was left for five days, having added 300ml of ethanol water solutions to 10g (desiccation article) of leaves of a guava 50%, and sometimes agitating. After filtering this, it freeze-dried, after evaporating.

[0012] [Example 3] It was left for five days, having added 300ml of ethanol water solutions to 10g (desiccation article) of a MEDOU sweet's leaves 50%, and sometimes agitating. After filtering this, it freeze-dried, after evaporating.

[0013]

[Example 1 of a formula] Tablet (1) The extract of an example 1 200g (2) Lactose 500g (3) Corn starch 290g (4) Stearin acid Mg Paste which mixed with 20g (1), (2), and 170g corn starch, and was made from 70g corn starch 50g corn starch and (4) were added to granulation and this granulation, mixture was compressed with the \*\*\*\* tablet machine, and 1000 lock making tablet manufacture of the tablet was carried out.

[0014] [Example 2 of a formula] Extract of the drink example 2 1g xylitol 10g vitamin B1 hydrochloride 0.5mg vitamin B2 0.2mg vitamin C 500mg niacin 1.0mg pantothenic acid calcium Raw material of the 0.2mg above Measuring mixing was carried out and it was made 100ml with purified water:

[0015] [Example 3 of a formula] What changed and created the extract of the example 1 of the example 1 of a formula in the example 3 [0016] 1.0ml (0.5% water solution of an example) of lipase control test-method specimens, 1.0ml of substrate solutions, and 1.0ml of enzyme solutions were measured in the test tube, and it was left for 15 minutes in the constant temperature bath of 40 degrees C of picking. After 15 minutes, 5.0ml of cold water, in addition, temperature was returned to the room temperature and the absorbance by 425nm was measured. Purified water was used instead of the specimen, it considered as contrast, and the rate of control of lipase control was calculated.

[0017] the creation approach of the reagent used in the above-mentioned experiment -- a 1. substrate solution pNP-Valerate solution -- the volume was set at 50ml with the buffer solution for substrates, and those of constant-volume 2.pNP-Valérate solution (Pentanoic acid 4-nitrophenyl ester) Pentanoic acid 4-nitrophenyl ester 0.132g was set for 0.5ml at 10ml with the methanol.

3. the buffer-solution (0.05 M-TrisBuffer) tris (hydroxymethyl) aminomethane for substrates -- 3.03g and an olefin sulfonic acid -- 0.20g -- with purified water, the volume was set at pH7.7 with the hydrochloric acid after setting the volume at 500ml, and that of preparation 4. enzyme solution lipase (SIGMA;Type2) 10mg was set at 20ml with the buffer solution for dilution.

5. The volume of 12.12g and an olefin sulfonic acid was set at 0.80g, and that of 0.32g was set [ the buffer-solution (0.05 M-TrisBuffer) tris (hydroxymethyl) aminomethane for dilution ] for calcium chloride monohydrate at 2000ml with purified water.

[0018] A result is shown in Table -1.

[Table 1]

検体名	実施例 1	実施例 2	実施例 3
阻害率 (%)	62.7	50.0	50.1

[0019] 3 times, per time, one lock and 100g of examples 2 of a formula were eaten for three

months, and the example 1 of a formula or the example 3 of a formula was got, and conducted the questionnaire survey to eight use test adults every day. In addition, the example of a comparison changes the extract of the example of manufacture to water from an example. (Examples 1 and 2 of a comparison) This was carried out by two groups [ 16 ]. A criterion is as follows and the following tables summarized the result of a questionnaire.

The example of a formula is very better. The example of 3 formulas is quite better. The example of 2 formulas is a little better. There is none of a difference. The example of 0 comparisons is a little better. The example of -1 comparison is quite better. The example of -2 comparison is very better. -3 [0020] The approach of an experiment was performed as shown in Table -2.

[Table 2]

使 用 し た 検 体	
実験N o 1	処方例- 1, - 2 比較例- 1, - 2
実験N o 2	処方例- 3, - 2 比較例- 1, - 2

[0021] It became as it is shown in the \*\*\*\*\* table -3.

[Table 3]

	体 重 の 減 少	体 脣 の 改 善
実験N o 1	1 2	1 1
実験N o 2	1 1	1 0

[0022]

[Effect] Safety presses down absorption of a carbohydrate highly and the lipase inhibitor which blended the solvent extraction object of gambir catechu, the leaf a guava's, and a MEDOU sweet's leaf prevents obesity, a heart disease, arteriosclerosis, etc.

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[Translation done.]